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Kampong Notes

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# PLANTS OF THE EVERGLADES

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The state of Florida contains enormous acreages of marshlands, ranging in size from tiny isolated depressions in the extensive areas of pinelands to the awesome vastness of the Everglades. But the Everglades is not special just to Florida—it is unique in the world. Of the world's larger freshwater wetlands, most are associated either with river systems that overflow their banks during the rainy season, or with flat areas in cold climates where the water from melted snow has nowhere to go during the warm months. The Everglades, as a gigantic "sheet flow" ecosystem, originally some 4,000 square miles in size, appears to be one of a kind outside of deep tropical latitudes. A few similar ecosystems do exist—the wet savannas of northern South America, for example.

If a single word had to be used to describe the Everglades, it would be "sawgrass." Actually, sawgrass is not a grass but is a sedge, a family closely related to the true grasses. (However, upon saying "saw sedge" a few times, it becomes apparent why no one has corrected the name!) But there is far more to know about the vegetation of the Everglades than just sawgrass. The kinds of marsh plants found there number over 100 species.

| COMMON NAME | SCIENTIFIC NAME |
|---|---|
| arrow head | *Sagittaria lancifolia* |
| common cattail | *Typha latifolia* |
| muhly grass (or hairgrass) | *Muhlenbergia filipes* |
| maidencane | *Panicum hemitomon* |
| spike rush | *Eleocharis cellulosa* |
| white-top sedge | *Dichromena colorata* |
| sawgrass | *Cladium jamaicense* |
| Tracy's beak rush | *Rhynchospora tracyi* |
| inundated beak rush (water rush) | *Ryhnchospora inundata* |
| pickerel weed | *Pontederia cordata* |
| spider lily | *Hymenocallis latifolia* |
| swamp lily | *Crinum americanum* |
| flag (fireflag or arrowroot) | *Thalia geniculata* |
| spatterdock (yellow water-lily) | *Nuphar luteum* |
| white water-lily | *Nymphaea odorata* |
| floating heart | *Nymphoides aquatica* |
| water hyssop | *Bacopa caroliniana* |
| bladderwort | *Utricularia foliosa* |

From a biogeographic perspective, most of these species (such as sawgrass) have such extensive ranges in temperate and tropical regions, that the distinction—tropical or temperate—becomes unimportant. But, in considering the overall marsh flora, the temperate affinities are more common, with very few examples, such as flag, being of tropical origin.

Variations in the marsh vegetation over the expanses of the Everglades have prompted many attempts to define particular plant communities. There are variations of a regional nature, having to do with geologic and hydrologic conditions, and there are many localized variations. As a wetland in a region where there are pronounced wet and dry seasons, the conditions promoting and restricting growth of various kinds of marsh plants are always at work. The rigors of excessive flooding and the opposite—concurrent drought and fire—are the important factors. They have resulted in the mosaic pattern of growth seen in most areas of the Everglades, a pattern most easily appreciated from an aerial view. But, gradations from one area to another often make it difficult to judge where one community ends and another begins. As a result, no one classification system has come into general use, but the following categories are widely used (here in order of generally increasing hydroperiod): wet prairie, sawgrass marsh, slough, pronounced "slew" and pond.

Many species of marsh plants can be found in more than one community. Spike rush, for example, is common in wet prairies and sloughs, and it quickly invades areas where sawgrass has been killed perhaps by a soil fire, or by salt water from an unusual storm tide near the coast. Spike rush has leaves that are nearly round in cross section. Initially green, they become brownish-orange upon aging. Early morning or late afternoon sunlight can produce a stunning effect in areas of spike rush at these times.

While not appealing to everyone, an excellent way to appreciate the various plant communities of the Everglades is to hike through them. It comes as a surprise that footing is normally firm, even when the area is flooded—not as difficult or unpleasant as one might expect.

## ORIGIN OF THE EVERGLADES

All of the environmental factors that regulate the Everglades—the seasonality of rainfall, water quality, fire and unique geographic/geologic features—have been responsible for its development. But this development has occurred only very recently, in geologic time. The oldest peat layers of the Everglades are only about 5,000 years old. Sea level at that time had risen enough—from its much lower stand during the glacial period—so that the area of the modern Everglades could no longer drain rapidly. Florida's rainfall had increased to resemble today's—a much wetter climate than had existed during earlier post-glacial times. The presence of surface water began to stress then-existing upland plants, and to favor the growth of marsh plants. Under the protection of water, wetland soils began to accumulate: the Everglades was "born."

What had probably been a region dominated by upland plant communities, including pinelands like those existing today along the eastern edges of the Everglades, began to disappear. First in the areas of lowest elevation, and then progressively higher and higher, the Everglades vegetation advanced, its developing soils covering the original scanty soil and widely exposed bedrock—the "floor" of today's Everglades. Because the development of the wetland soils depended upon water level, the resulting Everglades terrain was very flat, far more level than the original rock floor beneath. This development or "growth" of the entire Everglades proceeded up to the level when wet season waters began to spill over the lower acres of the Atlantic Coastal Ridge, producing the headwaters of the several short rivers, such as the New River and the Miami River. Thus, given the elevation of the Atlantic Coastal Ridge, the Everglades evolved to the maximum possible extent, a process regulated by water, weather and fire.

*The above is taken from the unpublished manuscript, Everglades, Images and Ecosystem.*

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*Erratum:*

Our last issue, Volume 19, #4, was dated December 15, 1992. It should read 1991.

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Regarding our hearts of palm salad article from the last issue, it seems that heart of palm eaten in Europe comes from Columbia, rather than Brazil, which ships to the United States.

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# THE KAMPONG BECOMES PART OF THE NATIONAL TROPICAL BOTANICAL GARDEN

The following is part of our new publicity.

The Kampong, listed on the National Register of Historical Places, is the former home and introduction garden of Dr. David Fairchild, America's foremost plant collector in this century. Botanist, world traveler and leader in the field of plant introduction, Dr. Fairchild was the Columbus of tropical horticulture. On this seven-acre property, Dr. Fairchild, while Chief of the Seed and Plant Introduction Section of the U.S. Department of Agriculture for nearly half a century, introduced and grew tropical plants that he collected during his explorations. The more than 2,000 plants introduced by him between 1899 and 1930 include the soybean from Japan and dates from the Sahara. Others have become multi-million dollar industries in the United States: superior varieties of rice, winter wheat, avocados, mangos, cherry trees and oranges. More than 2,000 species are preserved at The Kampong and are augmented every year.

In 1963, Mrs. Edward C. Sweeney bought The Kampong and later donated it to the National Tropical Botanical Garden (NTBG), headquartered in Kauai, Hawaii. The NTBG is the only privately supported tropical garden in the United States chartered by an Act of Congress. The Kampong provides the NTBG with a presence in the continental United States in the only mainland state where tropical and subtropical plants can be grown and studied. The Kampong Fund board, comprised of distinguished scientists, representatives from the NTBG and the Florida community, oversees this important addition to the NTBG.

The NTBG and The Kampong intend to develop this site as their continental headquarters, with a conference and meeting center, living quarters for visiting scientists, research facilities and educational programs for the public. Future research will center on the collection and preservation of rare and endangered plant species of importance to mankind.